



**ENGINEERING OPERATIONS COMMITTEE  
MEETING MINUTES  
MAY 1, 1997, 9:00 A.M.  
MATERIALS AND TECHNOLOGY CONFERENCE ROOM**

Present:	T. A. Coleman	A. Clover (L. R. Brown)	C. J. Arnold
	J. W. Reincke	J. Kanillopoulos (J. D. Culp)	C. Roberts
	T. A. Fort	W. C. Turner	E. Savas
	E. D. Winkler	R. S. Cadena (S. E. Hohl)	
Guest:	S. R. Kulkarni	Dr. N. F. Grace (Lawrence Tech. University)	
	R. D. Till		

**OLD BUSINESS**

**1. Approval of the Minutes of the April 3, 1997, Meeting -T. A. Coleman**

Minutes of the April 3, 1997, meeting were approved as written.

**2. Corridor Basis Construction (CBC) - C. J. Arnold/W. C. Turner**

C. J. Arnold will be among those leaving at the end of May, so it is necessary to appoint a new chairperson. As communicated to committee members in a memo dated, April 11, 1997, Brian Ness, District 8 Project Development Engineer has been selected to serve as chair. The kick-off meeting for this effort will be on May 20, 1997, starting at 9:00 a.m. in the Design Conference Room in Lansing. Tom Coleman will provide the purpose and intent to the members.

Committee members include the following:

- \*Charles J. Arnold, Design
- Sudhakar R. Kulkarni, Bridge Design
- \*William C. Turner, Road Design
- Steven C. Bower, Design, Pavement Management
- Robert J. Kelley, Design, Bridge management
- \*John J. Kanillopoulos, Traffic and Safety, SMS and Safety Programs
- Roger Safford, District 9 Project Development
- Larry L. Galehouse (Ex Officio), Maintenance, Preventive Maintenance
- Sonny Jadun (Ex Officio), Maintenance, Bridge Inspection
- Dwight A. Hornbeck (Ex Officio), District 8 Maintenance Management
- Thomas A. Fort - Representative, Federal Highway Administration
- Brian Ness, District 8, Project Development

Members\* who have elected to retire will work with their supervisor and staff to select an appropriate replacement.

**ACTION:** Brian Ness, committee chair, will forward the revised membership list to the EOC and will provide a report at the June meeting.

3. **Speed Limits in Work Zones - L. R. Brown/A. Clover**

The final draft of maintenance procedures, *To Provide Guidance for Short-Term Daytime Stationary Operations for Lane Closures on Freeways*, was presented for consideration to the committee. The committee provided comments and suggestions for inclusion in a re-write of the procedure.

**ACTION:** The Maintenance Division will incorporate the comments/suggestions in a revised final draft and present it for final approval at the June meeting.

4. **Bituminous Advisory Committee (BAC) Future - E. D. Winkler**

This item was tabled until the June meeting.

5. **Emergency Classification Guideline for Bridge Inspectors - L. R. Brown/A. Clover**

The Maintenance Division is coordinating the development of the proposed guidelines and receiving good feedback from districts. A final draft of the procedures will be completed within the next two weeks.

**ACTION:** The Maintenance Division will present a final draft of the revised guidelines at the June meeting.

6. **Mechanistic Design Implementation Plan for Flexible Pavement and Overlays - D. L. Smiley/G. Baladi**

This item was tabled until the June meeting.

NEW BUSINESS

1. **Bridge Superstructure Using Composite Materials for Reinforcement - S. R. Kulkarni/R. Till/Dr. N. F. Grace (Lawrence Tech University)**

Severe winter conditions in Michigan require the extensive use of salt application as part of our maintenance program. Steel reinforcement in bridge decks and beams corrode due to salt application for snow removal, resulting in bridge deck delamination and structural deterioration. Initial investigation has shown that the use of composite materials for reinforcement in concrete will eliminate problems due to corrosion.

Dr. N. F. Grace of Lawrence Technology University presented an improved system under development that adequately serves future traffic needs while offering superior corrosion resistance when compared to conventional bridge construction. The improved system can effectively be achieved by employing a double-T (DT) girder cross-section that is reinforced with carbon (CFRP) or glass fiber reinforced plastic (GFRP) bars and prestressed internally and externally with carbon fiber reinforced plastic (CFRP) strands. This DT and CFRP/GFRP bridge system is a new design that employs an innovative concept for development of a corrosion-free bridge that requires no shoring or forms.

The proposed recommendation is to construct a bridge superstructure using this concept and to monitor its performance. This project is proposed as a joint cooperative effort with industry and Lawrence Tech University to build the experimental bridge superstructure on a highway carrying low ADT.

**ACTION:** The EOC approved the recommendation as presented with the stipulation that measures to monitor success and evaluation be established and performed early in the process.

2. **Development of a Guide for Evaluation of Existing Bridges - J. W. Reincke**

The research project to develop a *Guide for Evaluation of Existing Bridges* is proposed to address a growing need for developing efficient procedures for evaluation of the actual load spectra, load distribution, actual strength, and predict the remaining life of the structure. There is a need to verify if the currently used distribution factor,  $s/14$ , is too conservative. Does this factor account for one lane loaded or two lanes? Therefore, this project will focus on the development of efficient procedures for bridge evaluation and diagnostics, including both analytical methods and field testing.

The objective of the proposed research is the development and verification of the procedures for diagnostic tests to determine the load distribution factors for existing bridges. The research will be based on the results of the studies carried out in the previous years. Diagnostic tests will be performed to verify the distribution of load, identify the critical components and sections, and explain inadequate performance (e.g. excessive vibration). The objective of the proof load tests is to determine the lower bound (minimum) of capacity of the tested structure. The procedures will be verified on selected bridges. The final number and selection of bridges and testing procedures will be coordinated by MDOT staff.

The *Guide for Evaluation of Existing Bridges* will provide the description of procedures for diagnostic testing, determination of load distribution, weigh-in-motion truck measurement, and proof load testing. It will include description of equipment, installation procedures, calibration of equipment, operation of equipment, measurement, and processing and interpretation of results.

**ACTION:** The EOC approved the proposed research project and funding as presented with the stipulation that revisions will be made to address the comments provided by the committee.

3. **Research Report R-1350, *Development and Evaluation of a Mobile System for Measurement of Retroreflectivity of Traffic Signs* - J. W. Reincke**

The final report was presented for approval. Several comments and suggestions were presented by the committee.

**ACTION:** The EOC approved the report with the stipulation that the report be revised to incorporate the committee comments/suggestions and to coordinate the use of the mobile system with the Traffic and Safety Division.

**4. Concrete Pavement Repairs - C. J. Arnold**

After a brief discussion, the committee agreed that the repair of concrete pavements (number of repairs per mile) should not be arbitrarily limited, but should be determined by the condition of the pavement and the comparative costs for the job.

**5. EOC Future - T. A. Coleman**

A discussion ensued regarding the retirement of several members of the committee. The committee concluded that acting representatives should be identified until permanent replacements can be named.

Tom Coleman, Chairperson, expressed his thanks and acknowledged the contributions of committee members retiring June 1, 1997:

C. J. Arnold, Design Division	41 Years
Bil Turner, Pavement Selection Review Committee	30 Years
John Kanillopoulos, Traffic and Safety Division	38 Years
Ed Winkler, Bituminous Advisory Committee	36 Years

The committee acknowledged the contributions of Tom Coleman during his 40 years of service and expressed their thanks.

(Signed Copy on File at M&T)

Calvin Roberts, Secretary  
Engineering Operations Committee

CR:kat

cc: EOC Members

District Engineers

R. A. Welke	R. J. Risser, Jr. (MCPA)	T. Adams (MCA)	B. Richter
D. L. Coleman	A. C. Milo (MRBA)	G. H. Grove	R. D. Till
D. L. Smiley	J. Becsey (MAPA)	R. W. Muller	C. Libiran
L. E. DeFrain	G. L. Mitchell	G. J. Bukoski	C. W. Whiteside
I. B. Patel	M. Newman (MAA)	J. Steele (FHWA)	K. Rothwell
S. Bower	M. Frierson	R. J. Lippert, Jr.	